



Indian Standard

(Reaffirmed 2012)

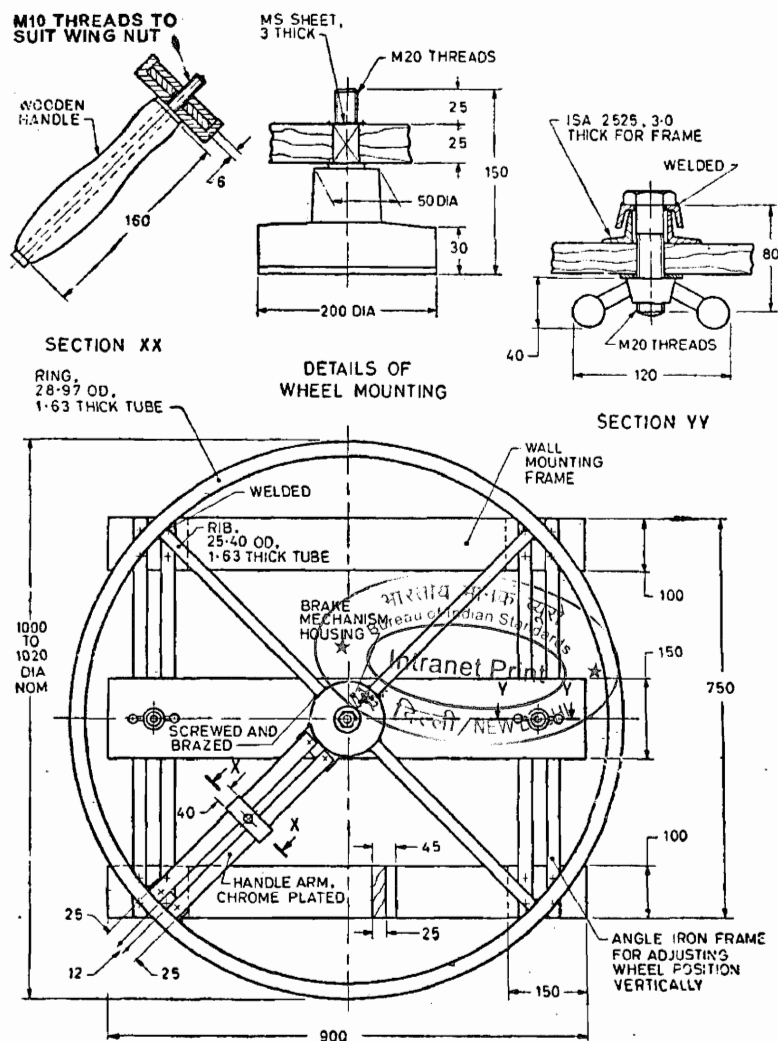
SPECIFICATION FOR SHOULDER WHEEL

(Reaffirmed 2017)

(First Revision)

1. Scope — Specifies the requirements pertaining to materials, shape, dimensions, construction, workmanship, finish and performance of shoulder wheel.

2. Shape and Dimensions—As shown in Fig. 1.



All dimensions in millimetres.

FIG. 1 SHOULDER WHEEL

3. Materials

3.1 Tubes — The tubes for the ring and the three inner ribs shall be of mild steel conforming to IS : 2039-1981 'Specification for steel tubes for bicycle and allied purposes (first revision)'.

Adopted 26 February 1982

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Price Rs 6.00

3.2 Timber — The timber used shall be well-seasoned, sound and free from knots, insect rot and other defects likely to reduce the strength and durability of the timber. The following species of timber are recommended for this purpose:

TRADE NAME	BOTANICAL NAME
Rosewood	<i>Dalbergia latifolia</i> Roxb.
Teak	<i>Tectona grandis</i> Linn. f.
Sissoo	<i>Dalbergia sissoo</i> Roxb.
Dhaman	<i>Grewia tiliacifolia</i> Vahl.
Bijasal	<i>Pterocarpus marsupium</i> Roxb.

3.3 Angle Iron — ISA 2525 [see SP : 6(1)-1964 ISI Handbook for structural engineers : 1. Structural steel sections (*revised*)] rolled steel angles of 3.0 mm thickness shall be used for the fabrication of the frame along which the wheel could be adjusted vertically.

3.4 All the screws and washers, the central spindle on which the wheel is mounted and other metal parts shall be manufactured from mild steel.

4. Construction

4.1 The inner ribs shall be soundly welded to the ring at one end and screwed in and brazed to the exterior of the brake mechanism housing at the other.

4.2 The angle iron pieces shall be securely screwed to the upper and lower wooden pieces to form a rigid frame.

4.3 The handle shall be capable of being fixed at any position on the handle arm to get the desired arc of motion for the individual.

4.4 The central wooden raft supporting the wheel spindle at its middle shall be capable of being fixed at any place along the angle iron frame.

4.5 A braking mechanism to give resistance to the motion when desired by the patient shall also be provided. The mechanism shall be built into the brake mechanism housing.

4.6 The braking mechanism shall satisfy the test given in 6.1.

5. Workmanship and Finish

5.1 The tubular ring, the inner ribs and the brake mechanism housing shall be finished in stoving enamel or air-drying spray paint. The colour of the paint and the number of coats shall be subject to agreement between the purchaser and the supplier. Prior to painting, all the parts shall be degreased, rustproofed by phosphating and then suitably protected by an anti-corrosive primer. Each coat shall be separately stoved or air-dried. The finished paint shall be hard and shall not readily chip or flake.

5.2 The wooden handle shall be capable of rotating about its axis.

5.3 The ring shall be symmetrical about its axis and shall be true in the plane at right angles to the plane of the axis. It shall in no case wobble when turned on its axis.

5.4 The wheel, with the brake not applied, shall rotate freely without any shake or obstruction.

5.5 The angle iron pieces, handle and knobs, shall be plated chromium over nickel in accordance with service Grade 2 of IS : 1068-1968 'Specification for electroplated coatings of nickel and chromium on iron and steel (*first revision*)'.

6. Tests

6.1 Fix the handle at its extreme position to give maximum arc of motion. With the handle arm horizontal, tighten the brake to its maximum value. Apply a force of 250 N (25 kgf approximately) on the handle. The wheel shall not rotate and the handle arm shall remain in its original position.

7. Marking — The wheel shall be marked with the manufacturer's name, initials or recognized trade-mark.

7.1 ISI Certification Marking — Details available from the Indian Standards Institution.

8. Packing — The shoulder wheel shall be packed as agreed to between the purchaser and the supplier.

EXPLANATORY NOTE

This standard was first published in 1970. Based on the new developments and changes in the industry, this standard has been revised incorporating changes in design and dimensions of some parts.